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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/040,653
Filing Date: October 19, 2001
Appellant(s): CASCONE ET AL.

MAILED

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Technology Center 2600

Richard S. Koppel
For Appellant

EXAMINER'S ANSWER

This is in response to the Appeal Brief filed 21 July 2006 appealing from the Office action mailed 24 May 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

5,832,431	Severson et al.	03 November 1998
6,215,874	Borza et al.	10 April 2001
5,267,318	Severson et al.	30 November 1993

(9) Grounds of Rejection

The following grounds of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 to 4, 9 to 14, 16 to 18, 21 to 26, and 28 to 50 are rejected under 35 U.S.C. 102(b) as being anticipated by *Severson et al.* ('431).

Regarding independent claim 1, *Severson et al.* ('431) discloses a method of synthesizing sound, comprising:

“generating a plurality of different kinds of simpler sound events in a sequence of simpler sound events, with repetitive occurrences of at least some of said kinds and with random time delays after a simpler sound event is generated until the next simpler

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sound event is generated" – a Random Sequenced Sound (RSS) might choose to have the next segment to be played from a Uniform distribution, with an equal number of 1's, 2's, 3's, and 4's in a random sequence; or RSS might choose the segments from a Weighted Uniform distribution that might play as {1, 4, 1, 1, 3, 1, 1, 2, 2, 1, 1, 1 . . . etc.} (column 5, lines 13 to 30); a random sequence of 1's, 2's, 3's, and 4's produces "random time delays after a simpler sound event is generated until the next simpler sound event is generated" because the time between occurrences of any two types of the sounds, *i.e.* 2's and 4's, is random; if 1's are viewed a background sound, then there are random time delays between one simpler sound event, *e.g.* sound event 4, and a next simpler sound event, *e.g.* sound event 3 or sound event 2; thus, for two (or more) Random Sound Sequence (RSS) Machines, a "Stormy Night" sound effect, with a distant church bell, thunder, squeaking gate, barking dog, *etc.*, contains a number of simpler sound events, *i.e.* the church bell, the barking dog, the thunder, having random time delays between them; then a "Haunted" sound effect, with a moaning ghost, a crazy laugh, a howling wolf, a flapping bat, is combined to create a "Haunted House on a Stormy Night" sound effect, containing a number of simpler sound events with random and unpredictable time delays between each sound within a sound effect (column 7, lines 37 to 54);

"combining said successive simpler sound events into said complex sound" – Random Sequenced Sound is generated by selecting, playing, and repeating sound segments (column 2, lines 59 to 67; column 7, lines 37 to 54).

Regarding independent claim 35, *Severson et al.* ('431) discloses a method of synthesizing sound, comprising:

“generating a sequence of simpler sound events with random time delays after a simpler sound event is generated until a next simpler sound event is generated” – a Random Sequenced Sound (RSS) might choose to have the next segment to be played from a Uniform distribution, with an equal number of 1's, 2's, 3's, and 4's in a random sequence; or RSS might choose the segments from a Weighted Uniform distribution that might play as {1, 4, 1, 1, 3, 1, 1, 2, 2, 1, 1, 1 . . . etc.} (column 5, lines 13 to 30); a random sequence of 1's, 2's, 3's, and 4's produces “random time delays after a simpler sound event is generated until the next simpler sound event is generated” because the time between occurrences of any two types of the sounds, *i.e.* 2's and 4's, is random; if 1's are viewed a background sound, then there are random time delays between one simpler sound event, *e.g.* sound event 4, and a next simpler sound event, *e.g.* sound event 3 or sound event 2; thus, for two (or more) Random Sound Sequence (RSS) Machines, a “Stormy Night” sound effect, with a distant church bell, thunder, squeaking gate, barking dog, *etc.*, contains a number of simpler sound events, *i.e.* the church bell, the barking dog, the thunder, having random time delays between them; then a “Haunted” sound effect, with a moaning ghost, a crazy laugh, a howling wolf, a flapping bat, is combined to create a “Haunted House on a Stormy Night” sound effect, containing a number of simpler sound events with random and unpredictable time delays between each sound within a sound effect (column 7, lines 37 to 54);

“controlling said simpler sound events in accordance with one or more sound event parameters” – memory 403 contains sound records and programming for performing functions of sound record selection based on an overall “story line” that defines the theme to be played out; a software language allows for definitions of instructions for the Random Sequenced Sound (RSS) programs (column 12, lines 54 to 67); a line of program code may be “002 PlayRecord (Random3, 12)” where “Random3” indicates the kind of probability function that is used on “Group 12” recordings (column 13, lines 8 to 13);

“selecting the values of said sound event parameters in accordance with respective input parameters having random distributions” – each distribution would have a set of arguments to define its characteristics; for instance, a Gaussian distribution would be defined by its mean and standard deviation; kinds of probability functions are 1. Gaussian, 2. chi-squared, 3. uniform *etc.* (column 13, line 8 to 21);

“combining said simpler sound events into said complex sound” – Random Sequenced Sound is generated by selecting, playing, and repeating sound segments (column 2, lines 59 to 67).

Regarding independent claim 49, *Severson et al.* ('431) discloses a method of synthesizing sound, comprising:

“generating a plurality of different kinds of simpler sound events with respective delays between the trigger times of successive simpler sound events in said sequence, and with repetitive occurrences of each kind” – a 32-second segment of a continuous

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sound record is broken into a number (say 4) of equal segments (column 4, line 64 to column 5, line 12); Random Signal Generator 303 and Clock 311 provide signals to Digital Sound Generator 306 to control when random sound effects are played (column 11, lines 20 to column 12, line 17); signals from Random Signal Generator 303 and Clock 311 act as “trigger times”;

“establishing respective time delays between the trigger times of at least some of said kinds of simpler sound events independent of the durations of said simpler sound events, and independent of the kinds of simpler sound events embodied by said at least some simpler sound events” – a Random Sequenced Sound (RSS) might choose to have the next segment to be played from a Uniform distribution, with an equal number of 1's, 2's, 3', and 4's in a random sequence; or RSS might choose the segments from a Weighted Uniform distribution that might play as {1, 4, 1, 1, 3, 1, 1, 2, 2, 1, 1, 1 . . . etc.} (column 5, lines 13 to 30); implicitly, a random sound effect is “independent of their respective durations” because the overall duration of sound effect is fixed in a library of sound effects, but a time distribution for insertion is random (column 7, line 55 to column 8, line 5); although some examples involve making a likelihood of one sound depend upon another sound (column 8, lines 5 to 21), sounds for a uniform distribution are produced randomly (column 5, lines 13 to 30);

“combining said simpler sound events into said complex sound” – Random Sequenced Sound is generated by selecting, playing, and repeating sound segments (column 2, lines 59 to 67).

Regarding independent claim 50, *Severson et al.* ('431) discloses a method of synthesizing sound, comprising:

“generating a succession of simpler sound events with random time delays, after a simpler sound event is generated until the next simpler sound event is generated, that are independent of the respective durations of said sound events” – a Random Sequenced Sound (RSS) might choose to have the next segment to be played from a Uniform distribution, with an equal number of 1's, 2's, 3', and 4's in a random sequence; or RSS might choose the segments from a Weighted Uniform distribution that might play as {1, 4, 1, 1, 3, 1, 1, 2, 2, 1, 1, 1 . . . etc.} (column 5, lines 13 to 30); a random sequence of 1's, 2's, 3's, and 4's produces “random time delays after a simpler sound event is generated until the next simpler sound event is generated” because the time between occurrences of any two types of the sounds, i.e. 2's and 4's, is random; if 1's are viewed a background sound, then there are random time delays between one simpler sound event, e.g. sound event 4, and a next simpler sound event, e.g. sound event 3 or sound event 2; thus, for two (or more) Random Sound Sequence (RSS) Machines, a “Stormy Night” sound effect, with a distant church bell, thunder, squeaking gate, barking dog, *etc.*, contains a number of simpler sound events, *i.e.* the church bell, the barking dog, the thunder, having random time delays between them; then a “Haunted” sound effect, with a moaning ghost, a crazy laugh, a howling wolf, a flapping bat, is combined to create a “Haunted House on a Stormy Night” sound effect, containing a number of simpler sound events with random and unpredictable time delays between each sound within a sound effect (column 7, lines 37 to 54);

“controlling said simpler sound events in accordance with one or more sound event parameters” – memory 403 contains sound records and programming for performing functions of sound record selection based on an overall “story line” that defines the theme to be played out; a software language allows for definitions of instructions for the Random Sequenced Sound (RSS) programs (column 12, lines 54 to 67); a line of program code may be “002 PlayRecord (Random3, 12)” where “Random3” indicates the kind of probability function that is used on “Group 12” recordings (column 13, lines 8 to 13);

“selecting the values of said sound event parameters in accordance with respective input parameters having random distributions” – each distribution would have a set of arguments to define its characteristics; for instance, a Gaussian distribution would be defined by its mean and standard deviation; kinds of probability functions are 1. Gaussian, 2. chi-squared, 3. uniform *etc.* (column 13, line 8 to 21).

Regarding claims 2 and 36, *Severson et al.* ('431) discloses a uniform distribution having on average an equal number of 1's, 2's, 3's, and 4's in a long sequence (column 5, lines 12 to 21); if the number and kinds of segments are uniform over a long sequence, then the average rate of each segment is constant.

Regarding claims 3 and 37, *Severson et al.* ('431) discloses that to further increase the depth and realism of continuous sound animation it is possible to have one or more aspects of the sound generation and sequencing be responsive to various events or inputs; examples of events to which responsiveness might be appropriate are

the passage of time, the coincidence with some other sound effect, or a control signal received from another RSS/LSS sound unit; the idea is that some aspect of the sound generation changes (such as the frequency of use of a sound segment) (column 8, line 62 to column 9, line 16).

Regarding claims 4 and 38, *Severson et al.* ('431) discloses both uniform distributions (column 5, lines 12 to 21) and event-responsive RSS or LSS (column 8, line 62 to column 9, line 16).

Regarding claim 9, *Severson et al.* ('431) discloses segments can be played back as: {1, 2, 3, 4, 1, 2, 3, 4 . . . , etc.} (column 4, line 64 to column 5, line 12); a fixed, ordered sequence 1, 2, 3, 4 provides "random time delays are predetermined for at least some of said kinds of simpler sound events."

Regarding claims 10, 24, 28, and 44 to 46, *Severson et al.* ('431) discloses that to further increase the depth and realism of continuous sound animation it is possible to have one or more aspects of the sound generation and sequencing be responsive to various events or inputs; examples of events to which responsiveness might be appropriate are the passage of time, the coincidence with some other sound effect, or a control signal received from another RSS/LSS sound unit; the idea is that some aspect of the sound generation changes (such as the frequency of use of a sound segment) (column 8, line 62 to column 9, line 16).

Regarding claim 11, *Severson et al.* ('431) discloses a uniform distribution having an equal number of 1's, 2's, 3's and 4's played as {1, 3, 2, 4, 2, 2, 2, 4, 1, 3, 4 . . . etc.}

(column 5, lines 12 to 21); time delays between each kind of segment are according to a probability distribution being selected as a uniform distribution beforehand.

Regarding claims 12 and 30, *Severson et al.* ('431) discloses the functions of random generation may be programmed by a user (column 12, lines 54 to 67).

Regarding claims 13, 25, and 26, *Severson et al.* ('431) discloses line code for a program defines parameters "(Random3, 12)" or "Random 1(m,s)" for a kind of probability function, mean, and standard deviation (column 13, lines 6 to 21).

Regarding claims 14 and 39, *Severson et al.* ('431) discloses music rhythm synthesis, where rhythm notes may have a random aspect to the specific note (such as volume, pitch or timbre) (column 9, lines 52 to 59).

Regarding claims 16 to 18, 21 to 23, and 40 to 43, *Severson et al.* ('431) discloses musical notes having volume, pitch, or timbre ("the parameters") may have a random aspect (column 9, lines 52 to 59); additionally, a random distribution may have arguments of a mean and standard deviation that vary over time as a function of temperature (column 13, lines 8 to 54), or an event-responsiveness, so that aspects of sound generation are responsive to the passage of time, coincidence with some other sound event; the pitch or loudness of a sound event may change (column 8, line 62 to column 9, line 16).

Regarding claim 29, *Severson et al.* ('431) discloses producing sound effects for games (column 3, line 44; column 8, line 62 to column 9, line 16).

Regarding claim 31 and 32, *Severson et al.* ('431) discloses line code for a program defines parameters "(Random3, 12)" or "Random 1(m,s)" for a kind of

probability function, mean, and standard deviation; mean "m" or standard deviation "s" may be specified as preset values or they may be computed or selected based on the present state of the program (column 13, lines 6 to 21); a mean of a probability distribution is a "predetermined average value"; if a mean is computed based on the present state of the program, then the mean is "varied during the course of generating a complex sound event."

Regarding claim 33, *Severson et al. ('431)* discloses sound events are stored in Sound Record Memory 307 (column 11, lines 52 to 65: Figure 3); synthesizing sound from a digital memory is equivalent to "a digital wavetable synthesizer."

Regarding claim 34, *Severson et al. ('431)* discloses microprocessor 401 is connected through internal D/A 405 and A/D 406 (column 12, lines 22 to 36: Figure 4); A/D converter 406 allows external analog signals to be applied directly to microprocessor 401 for analog control of its behavior (column 12, lines 51 to 53); synthesizing sounds under control of an analog signal is equivalent to "an analog sound synthesizer".

Regarding claims 47 and 48, similar considerations apply as independent claims 49 and 50, as noted above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Severson et al.* ('431) in view of *Borza et al.*

Severson et al. ('431) suggests Random Sequenced Sound (RSS) may be generated as a timing signal from a Random Signal Generator 303, where a random signal is based on noise generated in electrical circuitry. (Column 12, Lines 7 to 17) It is known that noise generated in electrical circuitry is white noise. However, *Severson et al.* ('431) omits establishing a random time distribution in accordance with white noise crossing a predetermined threshold. *Borza et al.* teaches a random number generator, where noise values above a predetermined value are defined as "1" bits while those values below a predetermined value are defined as "0" bits. White noise is used to produce "1" and "0" bit values. (Column 6, Lines 20 to 31; Column 7, Lines 41 to 67: Figures 4a to 4e) It is suggested that a random number generator based on white noise compared to a predetermined value has an advantage of providing a cost effective means of generating a random number. (Column 2, Lines 39 to 42). It would have been obvious to one having ordinary skill in the art to provide a random number generator based upon comparing white noise to predetermined values as taught by *Borza et al.* in the method of synthesizing sound of *Severson et al.* ('431) for the purpose of cost effectively generating random numbers.

Claims 19, 20, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Severson et al.* ('431) in view of *Severson et al.* ('318).

Severson et al. ('431) discloses selecting probability distributions as program code for "Random 1(m,s)", defining "m" as a desired mean and "s" as a desired standard deviation. (Column 13, Lines 14 to 21) However, *Severson et al.* ('431) omits user selectable minimum and maximum values for parameters, where a random parameter value is selected if a parameter value does not fall within maximum and minimum values. *Severson et al.* ('318) teaches a detect counter for resetting when a predetermined minimum or maximum is reached (column 13, line 54 to column 14, line 2), and where a random mode is triggered when a count is less than a predetermined minimum value (column 15, lines 46 to column 16, line 6). It is suggested that providing a voice selection mode as random or triggered varies cow sounds between quiet and contented or progressively more agitated as motion is detected. (Column 3, Lines 18 to 30) It would have been obvious to one having ordinary skill in the art to provide minimum and maximum parameter values to set a random parameter as taught by *Severson et al.* ('318) in the method to synthesize sound of *Severson et al.* ('431) for the purpose of varying sounds in response to motion.

(10) Response to Argument

Appellants argue that *Severson et al.* ('431) fails to anticipate claims 1 to 4, 9 to 14, 16 to 18, 21 to 26, and 28 to 50 under 35 U.S.C. §102(b) because the reference only discloses random time delays between sound segments of the same kind, whereas Appellants' method provides for random time delays between one simpler sound event

and a next simpler sound event, regardless of whether the next sound event is the same as the first one or different.

However, Appellants' claims do not set forth any limitations that can be reasonably construed to require that the random time delays are either between the same kind of sound events or different kinds of sound events. Exemplary independent claim 1 only speaks of there being a plurality of different kinds of sound events with random time delays. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). During patent examination, the pending claims must be "given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550- 51 (CCPA 1969). Moreover, if different kinds of events are all selected randomly, then there should be a random time distribution between both events of the same kind and events of a different kind, due to the nature of randomness.

Severson et al. ('431) repeatedly says that the segments are randomly selected and randomly sequenced. Indeed, the title of *Severson et al.* ('431) includes "Random Sequencing of Digital Sound Records". Because *Severson et al.* ('431) discloses that the segments are randomly sequenced, and the sequenced segments are represented

in a time domain, it follows that the segments have random time delays between their occurrences.

Regarding independent claims 1, 35, 49, and 50, the heart of Appellants' argument lies in the statement found on Page 7 of the Appeal Brief: "This *can result* in multiple sound events overlapping, or in gaps between successive events, unlike *Severson et al. ('431)* in which the sound segments are continuous." (*emphasis added*) However, there is nothing in Appellants' claims requiring that the segments overlap or contain gaps. Nor is there anything in Appellants' Specification disclosing that the claims could be amended to include these limitations without introducing new matter.

Severson et al. ('431) takes two approaches towards describing the randomly sequenced sounds. First, random sound sequencing is described mathematically as a distribution of segments labeled "1", "2", "3", and "4". Second, random sound sequencing is described by examples as, e.g., sound effects of a "Haunted House on a Stormy Night", a "Cow Feedlot", or a "Baseball Game".

There is ample evidence that *Severson et al. ('431)* discloses random time delays between different kinds of sound events. *Severson et al. ('431)* discloses a Random Sequenced Sound (RSS) might choose to have the next segment to be played from a Uniform distribution, with an equal number of 1's, 2's, 3's, and 4's in a random sequence, or RSS might choose the segments from a Weighted Uniform distribution that might play as {1, 4, 1, 1, 3, 1, 1, 2, 2, 1, 1, 1 . . . etc.}. (Column 5, Lines 13 to 30) A random sequence of 1's, 2's, 3's, and 4's produces "random time delays after a simpler sound event is generated until the next simpler sound event is generated" because the

time between occurrences of any two types of the sounds, *i.e.* 2's and 4's, is random. If 1's are viewed a background sound, then there are random time delays between one simpler sound event, *e.g.* sound event 4, and a next simpler sound event, *e.g.* sound event 3 or sound event 2. Thus, for two (or more) Random Sound Sequence (RSS) Machines, a "Stormy Night" sound effect, with a distant church bell, thunder, squeaking gate, barking dog, *etc.*, contains a number of simpler sound events, *i.e.* the church bell, the barking dog, the thunder, having random time delays between them. Then a "Haunted" sound effect, with a moaning ghost, a crazy laugh, a howling wolf, a flapping bat, is combined to create a "Haunted House on a Stormy Night" sound effect, containing a number of simpler sound events with random and unpredictable time delays between each sound within a sound effect. (Column 7, Lines 37 to 54)

Nor is there anything in Appellants' claims requiring that the sound effects are not continuous so as to distinguish over *Severson et al.* ('431). Appellants admit on Page 7 of their Appeal Brief that *Severson et al.* ('431) discloses silent pauses. Further, to give but one example, *Severson et al.* ('431) discloses a "crack of the bat" as an over-dubbed sound added to background sound, where a "crack of the bat" only occupies a small part of a segment. (Column 7, Lines 28 to 31) A "crack of a bat" sound segment over-dubbed to background sounds is not continuous, as the sound of the bat is momentary.

Regarding claims 47 to 50, Appellants argue that *Severson et al.* ('431) omits the feature that the random time delays are independent of the durations of the successive sound events. However, *Severson et al.* ('431) discloses that the segments may be of

unequal lengths. (Column 5, Lines 43 to 51) If the segments are randomly sequenced in *Severson et al.* ('431), if their length is fixed in a library of segments, or if they have unequal lengths, then there is no dependence between durations and time sequencing. Thus, it is inherent that the random time sequencing and time durations of the segments are independent for *Severson et al.* ('431).

Regarding claims 16 to 18, 21 to 26, and 28, Appellants argue that *Severson et al.* ('431) does not disclose simpler sound effects are characterized by parameters whose values are randomly varied. Appellants give examples of wave selection, pitch distribution, pan distribution, and amplitude distribution. However, *Severson et al.* ('431) discloses the feature of simpler sound effects being characterized by parameters whose values are randomly varied. *Severson et al.* ('431) discloses music rhythm synthesis, where individual notes have a random aspect (such as volume, pitch, or timbre). (Column 9, Lines 52 to 59) Thus, the notes are "the parameters", and values of the notes, *i.e.* their pitch or volume, are varied randomly.

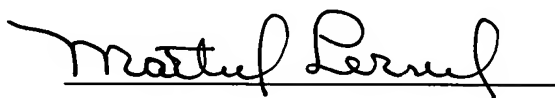
Therefore, the rejections of claims 1 to 4, 9 to 14, 16 to 18, 21 to 26, and 28 to 50 under 35 U.S.C. §102(b) as being anticipated by *Severson et al.* ('431), of claim 5 under 35 U.S.C. §103(a) as being unpatentable over *Severson et al.* ('431) in view of *Borza et al.*, and of claims 19, 20, and 27 under 35 U.S.C. §103(a) as being unpatentable over *Severson et al.* ('431) in view of *Severson et al.* ('318), are proper.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the Examiner in the Related Appeals and Interferences section of this Examiner's Answer.

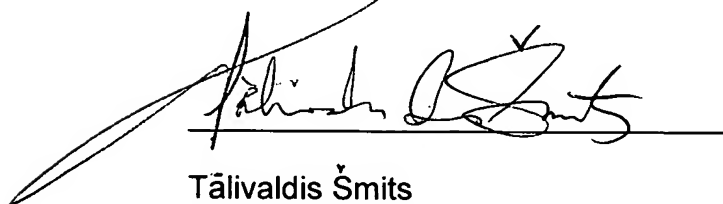
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

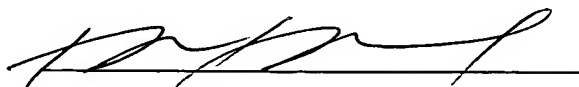
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Martin Lerner
Primary Examiner
Art Unit 2626

Appeal Conferees:

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Tāļivaldis Šmits
Senior Primary Examiner
Art Unit 2626

A handwritten signature in black ink, appearing to read "Richemond Dorvil", written over a horizontal line.

Richemond Dorvil
Supervisory Patent Examiner
Art Unit 2626